Electronic Version
Stylesheet Version v1.1.1

Claims

[c1] What is claimed is:

1.A compensator circuit for compensating an error signal generated by an optical storage device, the compensator circuit comprising:

a phase-lead compensator for receiving the error signal and generating a phase-lead error signal;

a band-pass filter connected in parallel with the lead compensator for magnifying a rotating frequency error signal and generating a filtered signal; and

an adder for adding the phase-lead error signal and the filtered signal so as to lower a steady state error of the error signal;

the compensator circuit not comprising any phase-lag compensator.

[c2] 2.The compensator circuit of claim 1, wherein the phase-lead compensator is a differentiator.

[c3] 3.The compensator circuit of claim 1 is installed inside an optical storage device.

[c4] 4.The compensator circuit of claim 3, wherein the optical storage device is a DVD-ROM drive.

[c5] 5.The compensator circuit of claim 3, wherein the optical storage device is a CD-ROM drive.

[c6] 6.The compensator circuit of claim 3, wherein the optical storage device is a CD-RW drive.

[c7] 7.The compensator circuit of claim 3, wherein the optical storage device is a DVD-RW drive.

[c8] 8.The compensator circuit of claim 3, wherein the optical storage device further comprises a pickuphead.

[c9] 9.A method for compensating an error signal generated by an optical storage device, the method comprising:
generating a phase-lead error signal according to the error signal with a phase-lead compensator;
generating a filtered signal according to the error signal with a band-pass filter; and
adding the phase-lead error signal and the filtered signal with an adder to lower a steady state error of the error signal;
the method not comprising the step of generating a phase-lag error signal with a phase-lag compensator.

[c10] 10.The method of claim 9, wherein the phase-lead compensator is a differentiator.